"Only The Paranoid Survive"

How Short Range Air Defense Artillery is Exploiting a Strategic Crisis Point

LT. COL. SCOTT E. SHIFRIN, USA • ANITA WOOD

Under Andrew Grove's leadership as President and CEO, Intel Corporation became the world's largest computer chip producer, the fifth-most-admired company in America, and the seventh-most-profitable company among the Fortune 500. Grove's insights and experiences offer a creative new way of dealing with the "nightmare moment" every leader dreads—the moment when massive change occurs and all bets are off.

Cutaway of a Cruise Missile

The U.S. Army is in the midst of massive change as they define their roles and missions and how to implement evolving strategy to achieve the Objective Force. The Army can draw lessons learned from common business practices, thereby assisting military leaders in the transformation to an Objective Force Army.

This article will examine strategic crisis points from business that directly parallel the Army's transformation of

The Avenger is a non-developmental item (NDI), lightweight, highly mobile and transportable surface-to-air missile/gun weapon system mounted on a High Mobility Multipurpose Wheeled Vehicle (HMMWV). Mounted on the turret are a .50 caliber M3P machine gun and two Standard Vehicle Missile Launchers (SVMLs), both of which contain four Stinger missiles.

Complementary Low-Altitude Weapons System (CLAWS) firing an AMRAAM AIM-120 missile from a U.S. Marine Corps High Mobility Multipurpose Wheeled Vehicle (HMMWV) platform during a Ballistic Missile Test Flight at Eglin AFB, Fla., on Oct. 24, 2001. The U.S. Army configuration for SL-AMRAAM is yet to be fully defined.

Shifrin *is the Product Manager, SHORAD Missiles and Platforms, Redstone Arsenal, Ala. He holds a Bachelor of Business Administration from Texas Tech University and a Master of Business Administration from Southwest Texas State University. He is a member of the Army Acquisition Corps.* ***Wood*** *is a Senior Engineer with CAS, Inc., Huntsville, Ala. She holds a Bachelor of Science in Electrical Computer Engineering from the University of Alabama at Huntsville and is currently enrolled at Florida Institute of Technology pursuing a Master of Science in Management. She has 17 years' experience in Program Management, working on various Air Defense programs.*

Photos/Images courtesy PM, SHORAD Missiles & Platforms

An Unmanned Aerial Vehicle (UAV) performs a reconnaissance mission and relays damage assessment intelligence information back to headquarters.

Surface Launched Advanced Medium Range Air-to-Air Missile (SL-AMRAAM) based on a High Mobility Multipurpose Wheeled Vehicle (HMMWV). This initial capability "system of systems" includes the launcher, missile, external sensor, and BMC4I [Battle Management Command, Control, Communications, Computers and Intelligence], that will enhance Air Defense by providing a netted and distributed architecture, compatible with the current SHORAD force, and has a missile that is interoperable with the other Services.

Short Range Air Defense (SHORAD) roles and missions. The current SHORAD weapon systems consist of the line-of-sight Stinger missile based on a High Mobility Wheeled Vehicle (Avenger), the Bradley Fighting Vehicle (Linebacker), as well as the Man-Portable System (MANPADS), with the mission to protect maneuver forces and critical assets from air and missile attack.

What is a Strategic Inflection Point?

As defined by Grove in his book *Only the Paranoid Survive: How to Exploit the Crisis Points that Challenge every Company and Career,* the critical point where transformation must occur is known as a Strategic Inflection Point. This happens when the balance of forces shifts from the old ways of operating and doing business and is transformed into the new process.

Before the Strategic Inflection Point, the organization was simply working to the old way of doing business. But something changes that necessitates a new approach, a new thought process, a new strategy, a new mode of operation—

The Strategic Inflection Point is the catalyst for change, and is the singular factor that causes action. When a strategic inflection point hits, all past rules shift fast, furiously, and forever.

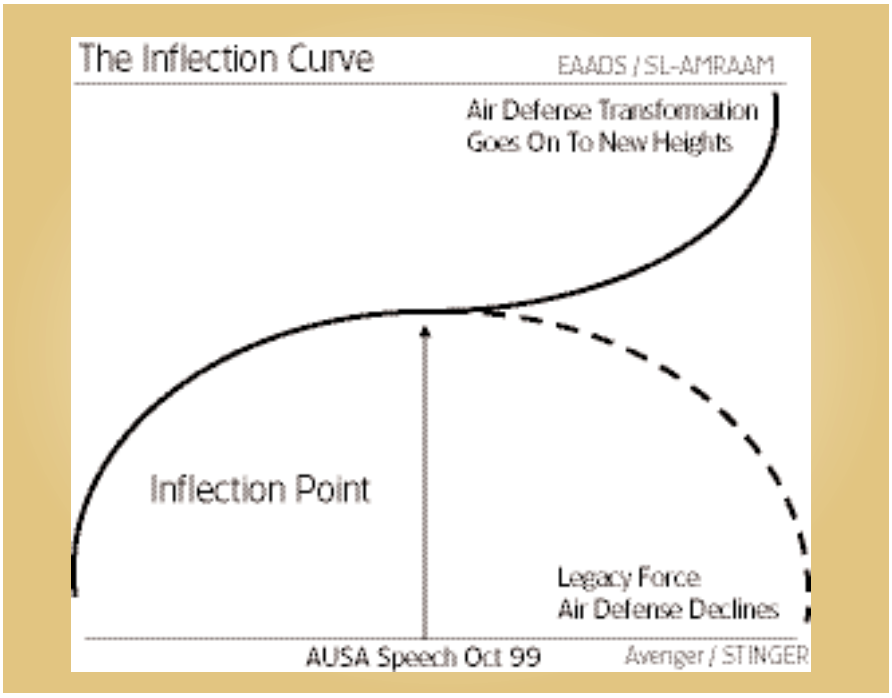
or failure will be imminent. What worked in the past doesn't work anymore. The Strategic Inflection Point is the catalyst for change, and is the singular factor that causes action. When a Strategic Inflection Point hits, all past rules shift fast, furiously, and forever.

In business, Strategic Inflection Points can be set off by almost anything: intense competition or changes in regulations, technology, leadership, or funding. A prime example of a Strategic Inflection Point can be seen when Wal-Mart builds in a small town—everything changes. Wal-Mart's logistics, computerized inventory management, large volume-based purchases, and company-wide training programs are no match for the hometown store. Wal-Mart's customer service, their can-do attitude, and their capability to lower prices corner the market. The hometown store's failure to either recognize or adapt to the change allows for a quick transformation shift.

Intel's Strategic Inflection Point

The computer industry has changed significantly over the last 20 years. During the 1980s, the computer industry (namely IBM, DEC, Sperry Univac, and Wang) sold computers as a "company package" that involved proprietary design, chips, computers, operating systems, and application software that was marketed and sold by company sales-

FIGURE 1. SHORAD Strategic Crisis Point



people. This was an expensive "vertical" purchase in that the customer got only what a particular company offered by purchasing their proprietary computer package.

In the mid 1990s, a crisis point in the industry occurred with the explosive rise in micro-processing power and the popularity of personal computers, combined with a dramatic drop in price. This changed the entire structure of the computer industry, and a new horizontal industry emerged to such an extent that no one company had the total edge on the market. A consumer could "mix and match" microprocessors, computer manufacturers, operating systems, and any one of many off-the-shelf software applications at any retail or computer store. The computer industry's transformation from the old vertical "cradle to grave" model to the new horizontal model took place over many years in small incremental steps. Intel had to adjust to the new market paradigm or face extinction.

What happened to cause this change? In retrospect, Grove identifies *the Strategic Inflection Point as when the Japanese entered the memory production market and began research and development of new chips to lead the world market.* In one Japanese company, it was reported that the memory development activities alone were in a large high-rise production building where, on separate floors, designers researched and developed several new generations of memory.

Compare this to the relatively small amount of memory chip development in the United States, with little to no investment in research and development, and it is easy to see why the United States was looking over its shoulder. The U.S. companies could not compete against Japanese low-cost, high-quality products. The computer industry was reliving the tribulations of other U.S. industries such as televisions, automobiles, steel manufacturing, and machinery that felt the impact of a Strategic Inflection Point from aggressive Japanese competition. Understandably, management's first reaction to a Strategic Inflection Point is denial. Some U.S. industries were losing the fight and losing money because they failed to recognize the Japanese business threat.

This transformation shift in the computer industry caused a "nightmare moment" for Andrew Grove and threatened Intel's continued success. Fortunately,

Fighting through the strategic inflection point is not a fast or easily achievable process. It must be taken in small incremental steps over several years (much like Intel). It also requires the support of senior leadership as they articulate the future vision while listening to the community.

Intel's management recognized and adapted to the shift before it was too late to change their legacy production. Given the history of other legacy U.S. industries, Intel's senior management was struggling and fearful for the company's future. Grove took charge and hoped the others would follow his lead. Recognizing the need to expand his knowledge base, he sponsored several grueling management-level debates and spent hours questioning and listening to employee's issues and concerns on the extreme edges of the business.

In the end, Grove succeeded and was in the forefront of the computer industry by transforming and adapting Intel's business from memory chip production to microprocessors. Intel increased production and marketed their microprocessor as the "brain" for any IBM-compatible computer, while concurrently phasing out their legacy memory production line. Intel's lessons learned from the Strategic Inflection Point are: 1) notice the shift, 2) get smart on the

cause of the new shift, 3) strategically adapt to the shift, 4) prepare the business to transform, and 5) provide the resources necessary to make the transformation.

The U.S. Army Strategic Inflection Point

In the hands of good leaders, a Strategic Inflection Point can be an ace. The Army leadership has committed itself through the transformation process to turning this Strategic Inflection Point into a positive force to win—both in business through the acquisition community and on the battlefield through the acts of soldiers.

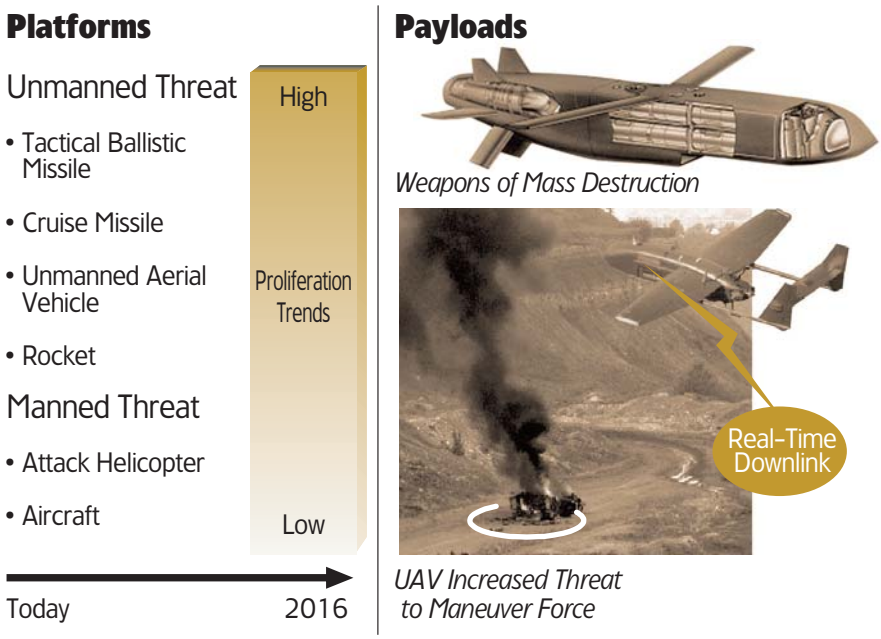
The 1990s were marked by the superior strength of the U.S. Army as we crushed Iraq in the Gulf War. After the war, serious reviews were undertaken to determine the strengths and weaknesses of the operational and technical capabilities of the Army and how they might be improved upon. No longer is it likely that an adversary will allow months of build-up and preparation, access to naval ports, and an opportunity to infuse the latest weapons and technology into maneuver units prior to conflict. The Army was too heavy, had too long of a logistics tail, and was not agile and mobile enough to react to any crisis around the world.

Identification of these deficiencies was the beginning of the U.S. Army's Strategic Inflection Point. It also marked the beginning of a new era as the Army began infusing advanced technologies into the maneuver forces by developing the digitized division, and began the transformation of the Army to the Objective Force. This change for the Army is a crossroads, and can either mean an opportunity to rise to new heights or it might as likely signal the beginning of the end as weapon system developers adjust to the transformation of the force.

The SHORAD Strategic Inflection Point

In October 1999, Chief of Staff of the Army Gen. Eric K. Shinseki delivered the now famous Association of the United States Army (AUSA) speech unveiling the Army vision defining how the Army will meet the nation's requirements today and in the future. The Army is transforming into a force that is strategically responsive and dominant at every point on the spectrum of conflict.

FIGURE 2. **Threat Proliferation Trends**



This AUSA speech was a realization to the SHORAD community that it had to transform and better define its role on the future battlefield or be left in the past. *This was the critical and defining moment for Short Range Air Defense Artillery* (Figure 1). For the Short Range Air Defense Artillery, it means a strategic inflection point of huge proportions. SHORAD is now in the midst of a major transformation attempting to realign, adapt to the goals and direction of the Army, define roles and missions, and develop a new and more lethal path ahead for the Objective Force.

To understand why the Strategic Inflection Point occurred, we must begin by looking at the SHORAD Legacy Force. The Stinger missile has performed admirably over the last 20 years, first, with the Afghanis when the Soviets invaded Afghanistan, then during the Gulf War, and today, in the struggle against terrorism. SHORAD must take action to position itself against an evolving threat with increased standoff capability, develop new and proactive methods for attacking the threat, and acquire the ability to quickly integrate new technologies when they become available.

With competition for fewer resources, funding for the Stinger-based platforms (Avenger and Linebacker) has been rescinded. As a result of the lack of funding, both the Combat Developer and the Material Developer recognized the urgent need to transform the maneuver Air Defense force. New ways of doing business had to be developed. SHORAD had no clear path ahead to protect the Army's maneuver forces from air and missile attack as they transform to the Objective Force.

SHORAD Path Ahead

The SHORAD transformation began by re-evaluating the threat to the maneuver force at the Unit of Action and Unit of Employment levels for the Objective Force timeframe. Now, the SHORAD force must concern itself with a new and growing threat, including targets beyond line of sight such as Unmanned Aerial Vehicles (both reconnaissance and combat), Cruise Missiles, as well as the tra-

ditional Rotary and Fixed Wing Aircraft. In the far-term, SHORAD must evolve to defeat Rockets, Artillery, and Mortars (Figure 2).

The Air Defense material and combat developer communities looked hard at future technologies, developing a leap-ahead or evolutionary acquisition approach that would provide for drastically improved capabilities in the near-term, while evolving the weapon system as the Army transforms to defeat threats in the far-term. Although still evolving as a result of the crisis point, it appears that Enhanced Area Air Defense System, or EAADS, will provide that opportunity and eventually replace most of the Stinger-based force.

Consistent with the development of the Future Combat System, the initial capability of EAADS is the Surface Launched Advanced Medium Range Air-to-Air Missile (SL-AMRAAM). This initial capability "system of systems" includes the launcher, missile, external sensor, and BMC4I [Battle Management Command, Control, Communications, Computers and Intelligence], that will enhance Air Defense by providing a netted and distributed architecture, compatible with the current SHORAD force, and has a missile that is interoperable with the other Services.

The entire EAADS concept fits well with Shinseki's Objective Force tenets—highly deployable, threat overmatch across the entire spectrum of conflict, and force-tailorable based on mission requirements (Figure 3).

SHORAD Lessons Learned

EAADS will be developed so that it will evolve in lockstep with the technology and the warfighter tactics, techniques, and procedures. Although the initial capability of EAADS (SL-AMRAAM) is a kinetic energy solution, it will have the ability to evolve to other more advanced kinetic energy and directed energy solutions as they mature. EAADS is an open architecture designed without any "dead end" solutions. Fighting through the Strategic Inflection Point is not a fast or easily achievable process. It must be taken in small incremental steps over several years (much like Intel). It also requires the support of senior leadership as they articulate the future vision while listening to the community.

A Proactive Step

The Army's vision of transformation is a proactive step. Army leadership saw the Strategic Inflection Point early enough and took the appropriate action to counter the expected future threat. The SHORAD community is diligently working toward the Objective Force goal and is applying the lessons learned from the business community. Countless hours of discussions, budget drills, requirements analyses, doctrine definition, planning, team building, and other exercises are paving the road to the new way of doing business.

SHORAD must take action to position itself against an evolving threat with increased standoff capability, develop new and proactive methods for attacking the threat, and acquire the ability to quickly integrate new technologies when they become available.

We are operating under new guidelines with a new objective defined. As technology evolves, EAADS is the future for SHORAD. SHORAD has the competitive edge and path forward as the Air Defense Objective Force rises to new heights after positively responding to the Strategic Inflection Point.

Editor's Note: **Shifrin** and **Wood** welcome questions or comments on this article. Contact them at **scott.shifrin@redstone.army.mil** or **anita.wood@redstone.army.mil**.

FIGURE 3. SL-AMRAAM Army Tenet Linkage